

151134

Monday, September 12, 2016 10:38:24 AM

N900040100

Setup Start *NS1*

Stop ***NS2***

Start Date: 9/6/2016 **Start Qty:** 12.00 ***12***

Cust Item ID:

Required Date: 9/12/2016 **Req'd Qty:** 12.00 ***12***

Customer:

DAS

Process Plan:

21
9.00

Date:

SEP 14 2016

Tooling:

Date:

Run Start *NR1*

QC:

Date:**SPC (Y/N):**

Date:

Stop ***NR2***

Draw Nbr	Revision Nbr
D4931	A

0.13

100

Doosan

Memo

1.04

Doosan Lathe

Machine as per folio FB210

Folio rev: AA

DWG REV: A

Deburr

QC2- Inspect parts off machine FAI/FAIB

0.00

110

QC

Memo

0.02

Quality Control

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Work Order ID 151134

Monday, September 12, 2016 10:38:24 AM

151134

Page 2

Item ID: D4931-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Engine Fitting (for acft models B2 & previous)

Start Date: 9/6/2016 Start Qty: 12.00 ***12***

Cust Item ID:

Required Date: 9/12/2016 Req'd Qty: 12.00 ***12***

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC8- Inspect parts - second check	0.00							
120						12	0		DAS 14 9-09
QC	Memo	0.04							16/09/20
Quality Control									
130	Identify as per dwg & Stock Location: <u>SH/38</u>	0.00							
130						12	6		DAS 6 9-09
Packaging	Memo	0.02							SEP 28 2016
Packaging									
140	QC21- Final Inspection - Work Order Release	0.00							
140									DAS 21 9-09
QC	Memo	0.20							OCT 03 2016
Quality Control									

DAS
21
9-09

SEP 29 2016

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER : _____			

Picklist Print

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Page 1
1

Work Order ID: 151134

151134

Parent Item: D4931-1

D4931-1

Parent Item Name: Engine Fitting (for acft models B2 & previous)

Start Date: 9/6/2016

Required Date: 9/12/2016

Start Qty: 12.00

Required Qty: 12.00

Comments: IPP REV:A NEW ISSUE 13-09-05 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M303R2.000		Purchased			No		f	6.4200		3.157895			

M303R2 000

303 ROUND BAR 2"

Location

Loc Qty

Loc Code

MAT028

6.42

m134776

6.42

M135687

~~3.157895~~
2.04

DAS
45
9-89

2016-9-23

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

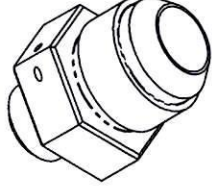
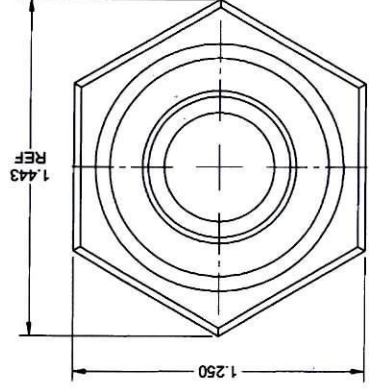
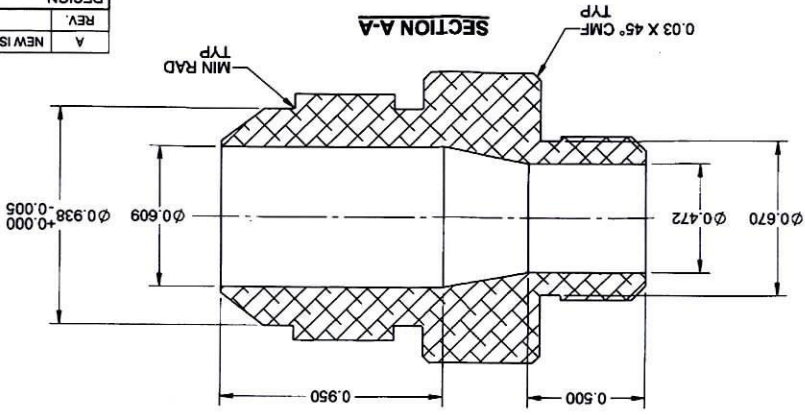
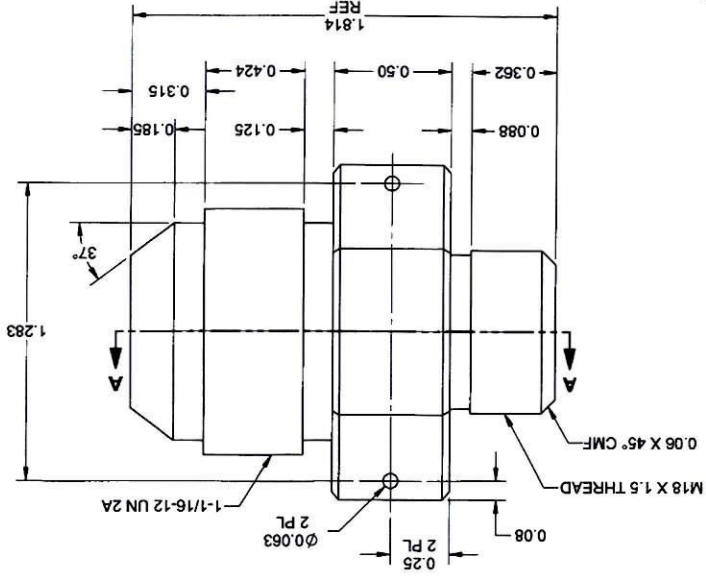
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	
OTHER : _____					

- NOTES:
- 1) MATERIAL: AISI 303 STAINLESS STEEL ROUND BAR
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART OSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 0.30 lbs
- PER DART SPEC M303H
PER ASTM A582
OR AISI 303 STAINLESS STEEL HEX BAR
REF DART SPEC M303R
PER ASTM A582

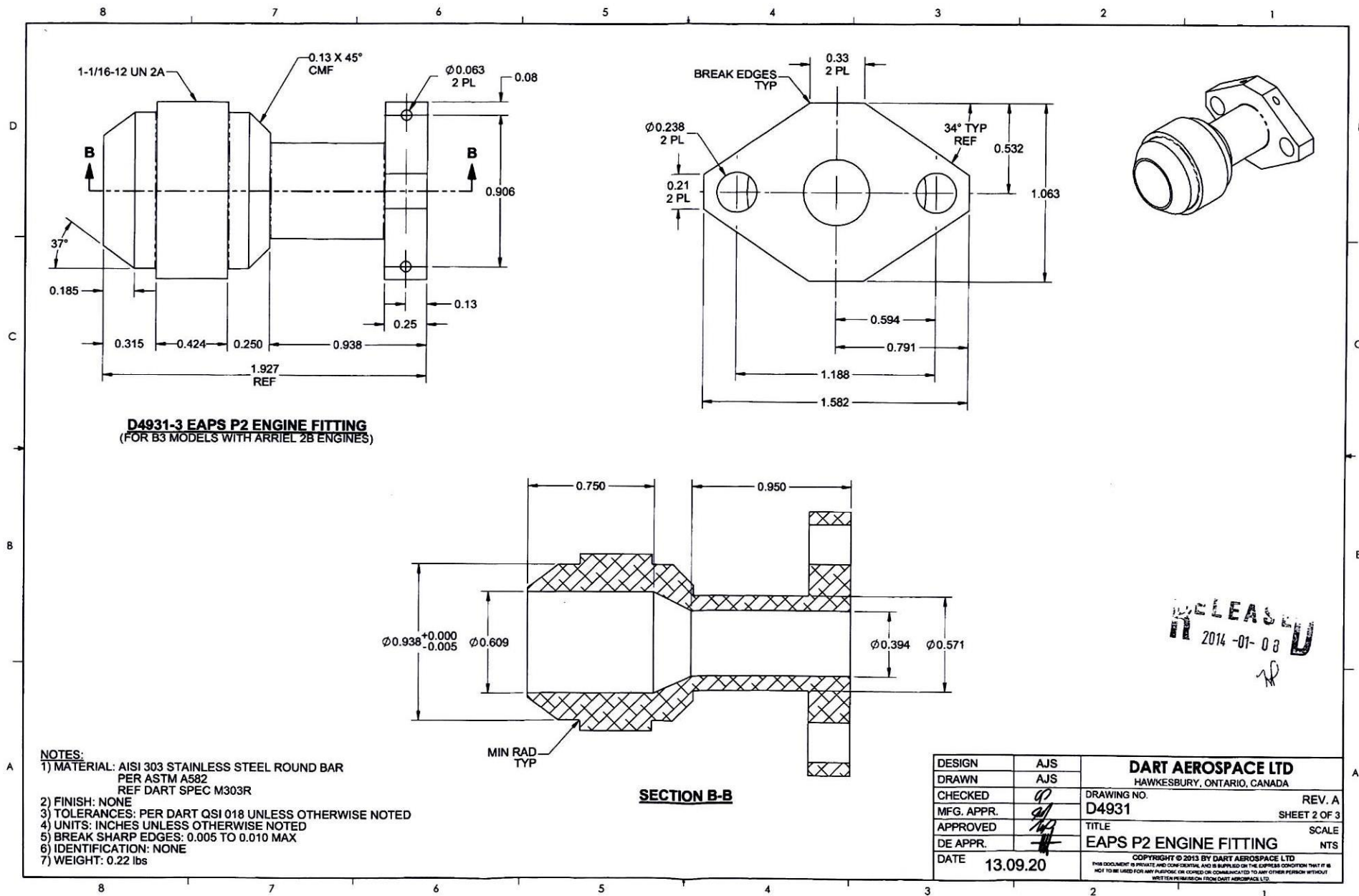
D4931-1 EAPS P2 ENGINE FITTING
(FOR MODELS B2 AND PREVIOUS)



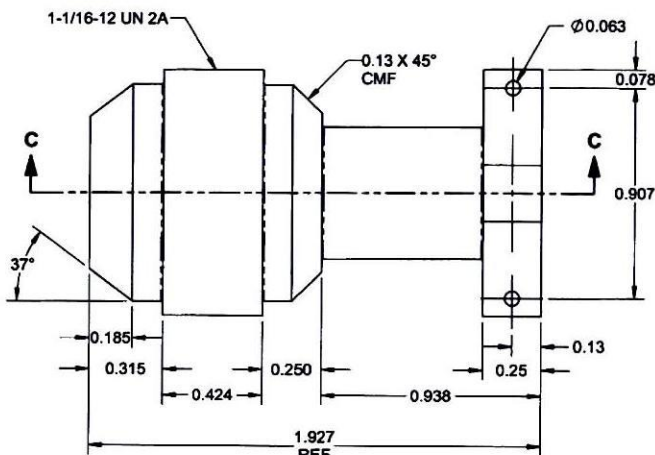
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 151134M5
16-09-14

RELEASED
2014-01-03

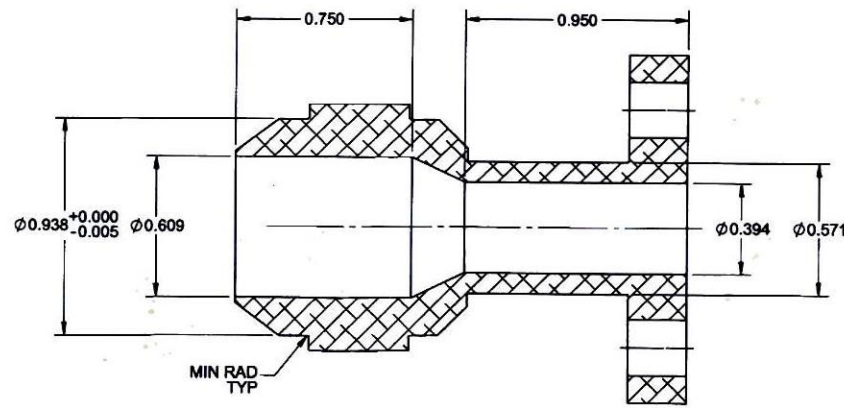
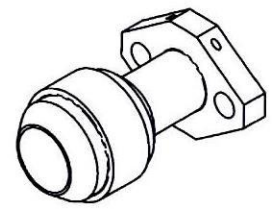
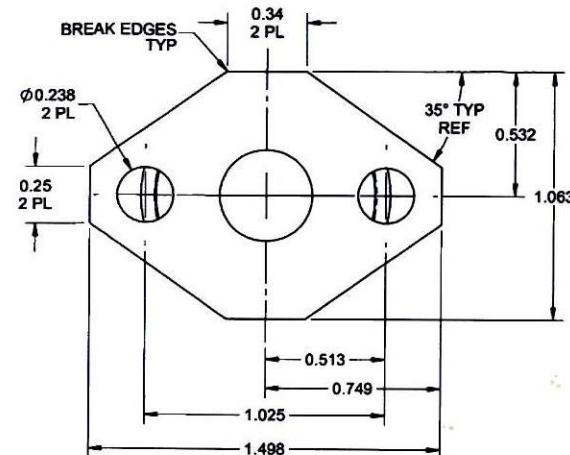
DESIGN	AJS	DATE	13.09.20
DRAWN	AJS	DE APPR	
CHECKED	AJS	APPROVED	
DRAWING NO.	D4931	MFG. APPR	
TITLE	EAPS P2 ENGINE FITTING	SCALE	NTS
REV. A		SHEET 1 OF 3	
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA			
REV. A		DATE	13.09.20
DESCRIPTION		BY	AJS
REV. A		DATE	13.09.20



8 7 6 5 4 3 2 1



D4931-5 EAPS P2 ENGINE FITTING
(FOR B3 MODELS WITH ARRIEL 2D ENGINES)



- NOTES:**
- 1) MATERIAL: AISI 303 STAINLESS STEEL ROUND BAR
PER ASTM A582
REF DART SPEC M303R
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
 - 6) IDENTIFICATION: NONE
 - 7) WEIGHT: 0.22 lbs

SECTION C-C

DESIGN	AJS	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AJS		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. A
MFG. APPR.	<i>[Signature]</i>	D4931	SHEET 3 OF 3
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	EAPS P2 ENGINE FITTING	NTS
DATE	13.09.20	COPYRIGHT © 2013 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL, AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

RELEASED
2014-01-08
[Signature]

8 7 6 5 4 3 2 1

DART AEROSPACE LTD		Work Order:	151137
Description: EAPS P2 Engine Fitting		Part Number:	D4931-1
Inspection Dwg: D4931	Rev: A	Page 1 of 1	

INSPECTION SHEET

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.06 x 45°	+/-0.030 x +/-0.5°	.050			Vern LP 09	
0.362	+/-0.010	.362			Vern LP 09	
0.088	+/-0.010	.090				
0.08	+/-0.030	.078			↓	
0.25	+/-0.030	.247			Mic LP 06	
0.50	+/-0.030	.508			Vern LP 09	
Ø0.063	+0.004/-0.001	.063			gage Pin	
0.125	+/-0.010	.127			Vern LP 09	
0.424	+/-0.010	.427			Mic LP 06	
0.315	+/-0.010	.312			Vern LP 09	
0.185	+/-0.010	.180			↓	
37°	+/-0.5°	36.5°			Protractor	
1.283	+/-0.010	1.280			Vern LP 09	
1.250	+/-0.010	1.249			↓	
Ø0.472	+0.006/-0.001	.472			gage Pin	
Ø0.670	+0.008/-0.001	.669			Vern LP 09	
0.500	+/-0.010	.497			↓	
0.950	+/-0.010	.952			↓	
Ø0.609	+0.008/-0.001	.609			gage Pin	
0.938	+0.000/-0.005	.935			Mx LP 01	
1.804 Ref	+/-0.010	1.810			Vern LP 09	
1-1/16-12 UN 2A	N/A	1-1/16-12				
M18 x 1.5 Thread	N/A	M18x1.5				
Wire Size 0.55	Max 1.099 ⁵ Min 1.093 ⁸	1.0975			Mic LP 02	
Wire Size 0.040	Max 0.737 ² Min 0.732 ³	.736			↓	
φmax - φmin	0.707 ⁴ - 0.688 ¹					
	DAS					
	45					

Measured by:	9-89	Checked by:	14	QC Inspector:	
Date:	2016-9-23	Date:	16/09/28	Date:	

Engineering Approval: (If necessary)		Date:	
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Rev	Date	Change	Revised by	Approved
A	14.08.27	New Issue	KJ	
B	16.05.30	Dimensions updated	KJ	